Gigabit Ethernet Switch

User's Guide

Version 1.0
P/N: ATNSGD5082503 Rev.1

This User's Guide contains important information regarding the installation of your switch. Please read it completely before beginning installation.

For future reference, record the serial number of your network switch in the space below:

SERIAL number

The serial number is located on the bottom of the switch.

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FCC Class A Certification Statement

Model SGD5 FCC Class A

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1)This device may not cause harmful interference, and (2)This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If the equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

. Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected to.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interface cables must be used in order to comply with emission limits. You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment. For more information please contact the Federal Communication Commission.

CE Mark Class A Statement In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

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P/N:1907GSW205T6380

ABOUT THIS GUIDE

This user's guide tells you how to install your 5-Port 1000BASE-T Gigabit Ethernet Switch, how to connect it to your Gigabit Ethernet network.

Terms

For simplicity, this documentation uses the terms "Switch" (first letter upper case) to refer to the 5-Port 1000BASE-T Gigabit Ethernet Switch, and "switch" (first letter lower case) to refer to all Ethernet switches, including the 5-Port 1000BASE-T Gigabit Ethernet Switch.

Overview of this User's Guide

Introduction. Describes the Switch and its features.

Unpacking and Setup. Helps you get started with the basic installation of the Switch.

Identifying External Components. Describes the front panel, rear panel and LED indicators of the Switch.

Technical Specifications. Lists all the technical specifications of the Switch.

This section describes the features of the 5-Port 1000BASE-T Gigabit Ethernet Switch, as well as providing some background information about Gigabit Ethernet and switching technology.

Gigabit Ethernet Technology

Gigabit Ethernet is an extension of IEEE 802.3 Ethernet utilizing the same packet structure, format, and support for CSMA/CD protocol, full duplex, flow control, and management objects, but with a tenfold increase in theoretical throughput over 100-Mbps Fast Ethernet and a hundredfold increase over 10-Mbps Ethernet. Since it is compatible with all 10-Mbps and 100-Mbps Ethernet environments, Gigabit Ethernet provides a straightforward upgrade without wasting a company's existing investment in hardware, software, and trained personnel.

The increased speed and extra bandwidth offered by Gigabit Ethernet is essential to coping with the network bottlenecks that frequently develop as computers and their busses get faster and more users use applications that generate more traffic. Upgrading key components, such as your backbone and servers to Gigabit Ethernet can greatly improve network response times as well as significantly speed up the traffic between your subnets.

Gigabit Ethernet supports video conferencing, complex imaging, and similar data-intensive applications. Likewise, since data transfers occur 10 times faster than Fast Ethernet, servers outfitted with Gigabit Ethernet NIC's are able to perform 10 times the number of operations in the same amount of time.

Switching Technology

Another key development pushing the limits of Ethernet technology is in the field of switching technology. A switch bridges Ethernet

packets at the MAC address level of the Ethernet protocol transmitting among connected Ethernet or fast Ethernet LAN segments.

Switching is a cost-effective way of increasing the total network capacity available to users on a local area network. A switch increases capacity and decreases network loading by making it possible for a local area network to be divided into different segments which don't compete with each other for network transmission capacity, giving a decreased load on each.

The switch acts as a high-speed selective bridge between the individual segments. Traffic that needs to go from one segment to another is automatically forwarded by the switch, without interfering with any other segments. This allows the total network capacity to be multiplied, while still maintaining the same network cabling and adapter cards.

Switching LAN technology is a marked improvement over the previous generation of network bridges, which were characterized by higher latencies. Routers have also been used to segment local area networks, but the cost of a router and the setup and maintenance required make routers relatively impractical. Today's switches are an ideal solution to most kinds of local area network congestion problems.

Features

The 5-Port 1000BASE-T Gigabit Ethernet Switch was designed for easy installation and high performance in an environment where traffic on the network and the number of users increase continuously.

- **5 1000BASE-T Gigabit Ethernet ports**
- **Supports Auto-Negotiation for 10/100/1000Mbps and duplex mode**
- **Supports Auto-MDIX for each port**
- **Support Full/Half duplex transfer mode for 10 and 100Mbps**

- **Support Full duplex transfer mode for 1000Mbps**
- **Full wire speed reception and transmission**
- **Store-and-Forward switching method**
- **Supports 8K absolute MAC addresses**
- **Supports 256KBytes RAM for data buffering**
- **Extensive front-panel diagnostic LEDs**
- **IEEE 802.3x flow control for full-duplex**
- **Back pressure flow control for half-duplex**

UNPACKING AND SETUP

This chapter provides unpacking and setup information for the Switch.

Unpacking

Open the shipping carton of the Switch and carefully unpack its contents. The carton should contain the following items:

- One SGD5 5-Port 1000BASE-T Gigabit Ethernet Switch
- Four rubber feet with adhesive backing
- One external power adapter
- This User's Guide

If any item is found missing or damaged, please contact your local supplier for replacement.

Setup

The setup of the Switch can be performed using the following steps:

- Install the Switch in a fairly cool and dry place. See *Technical Specification* for the acceptable operation temperature and humidity ranges.
- Install the Switch in a site free from strong electromagnetic source,vibration, dust,and direct sunlight.
- Leave at least 10cm of space at the left and right hand side of the Switch for ventilation.
- Visually inspect the DC power jack and make sure that it is fully secured to the power adapter.

IDENTIFYING EXTERNAL COMPONENTS

This chapter describes the front panel, rear panel and LED indicators of the Switch

Front Panel

The figure below shows the front panels of the switch.

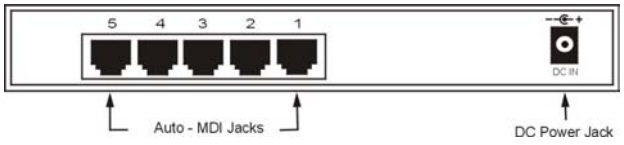
Front panel view of the Switch

LED Indicators

Comprehensive LED indicators display the conditions of the Switch and status of the network. A description of these LED indicators follows (see LED Indicators).

Rear Panel

The rear panel of the Switch consists of an DC power connector. The following figure shows the rear panel of the Switch.



Rear panel view of the Switch

DC Power Jack:

Power is supplied through an external AC power adapter. Check the technical specification section for information about the AC power input voltage.

1000BASE-T Ports:

Five Gigabit Ethernet ports of 10/100/1000Mbps Auto-Negotiation interface.

LED Indicators

The LED indicators of the Switch include Power, Link/Act, 1000Mbps and 100Mbps. The following shows the LED indicators for the Switch along with an explanation of each indicator.

- POWER

This indicator lights green when the Switch is receiving power, otherwise, it is off.

- Link/Act

These LED indicators are on when there is a secure connection (or link) to the desired port. The LED indicators blink whenever there is reception or transmission (i.e. Activity—Act) of data occurring at a port.

- 1000Mbps

These LED indicators are on when there is a secure connection (or link) to 1000Mbps Gigabit Ethernet device at the desired port.

- 100Mbps

These LED indicators are on when there is a secure connection (or link) to 100Mbps Fast Ethernet device at the desired port.

When the connection (or link) is 10Mbps, both of 1000Mbps and 100Mbps LED indicators are off.

General			
Standards:	IEEE 802.3ab 1000BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3 10BASE-T IEEE 802.3x Flow Control		
Protocol:	CSMA/CD		
Data Transfer Rate:	Ethernet:	10Mbps	(Half-duplex)
		20Mbps	(Full-duplex)
	Fast Ethernet:	100Mbps	(Half-duplex)
		200Mbps	(Full-duplex)
	Gigabit Ethernet:	2000Mbps	(Full-duplex)
Topology:	Star		
Network Cables:	Ethernet:	2-pair UTP Cat. 3,4,5, Unshield Twisted Pair (UTP)Cable	
	Fast Ethernet:	2-pair UTP Cat. 5, Unshield Twisted Pair (UTP)Cable	
	Gigabit Ethernet:	4-pair UTP Cat. 5, Unshield Twisted Pair (UTP)Cable	
Number of Ports:	Five(5) 1000BASE-T Gigabit Ethernet ports		

Physical and Environmental	
DC inputs:	7.5V 1.5A
Power Consumption:	8.5 watts maximum
Operating Temperature:	0 °C ~ 40°C
Storage Temperature:	-10°C ~ 70°C
Humidity:	5% ~ 95% RH, non-condensing
Dimensions:	171 x 98 x 29 mm (W x H x D)
Certification:	FCC Class A, CE Marking Class A, VCCI Class A
Performance	
Transmission Method:	Store-and-forward
RAM Buffer:	256K Bytes per device
Filtering Address Table:	8K MAC address per device
Packet Filtering/Forwarding Rate:	Full wire speed
MAC Address Learning:	Self-learning, auto-aging

Amer.com Warranty Policy

Limited Lifetime Warranty

In the event of a defect in quality or workmanship, Amer.com will repair or replace any hardware product sold by Amer.com with new or reconditioned parts free of charge in North America for a limited lifetime period unless otherwise specified on the sales invoice from the date of original purchase. All removed parts become the property of Amer.com. All replaced parts assume the original warranty.

This warranty is extended only to the original purchaser. Proof of purchase will be required before warranty service is provided.

This warranty covers only failures due to defects in quality or workmanship that occur during normal use. It does not cover damage that occurs in shipment, electrical storms, floods, dropped or other acts of nature. This warranty also does not cover any failure that results from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, modification, computer virus, improperly installed or faulty software, or service by anyone other than an Amer.com Service Technician. If there is evidence that the failure was due to user negligence, Amer.com has the right to void this warranty and or charge normal service rates for the subject repair.

The limited warranty covers a one (1) year period from date of purchase on Power Supplies, AC Adapters & Fans, after the 1 year a cost for replacement is applied to all products requiring such parts.

Amer.com is not responsible for any type of data loss on hard drive or other storage devices.

Warranty Service can be obtained during the warranty period by shipping, freight prepaid, or delivering the product to Amer.com in either the original package or a similar package providing an equal degree of protection. Amer.com will perform the required service and return the unit to the user (freight prepaid), if applicable, via the same mode (i.e. ground, air, etc.)

Limits and Expectations

There are no express warranties except as listed above.

Network products by Amer.com shall not be liable for incidental or consequential damages resulting from the use of this product. Any future upgrades, including (but not limited to) hardware and software are not covered by this limited warranty. If a hardware problem with this product develops during the warranty period, you may contact the Amer.com Service Center at:

Telephone (727) 549-0772

Facsimile (727) 549-0992

Service Center

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